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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,262	07/30/2003	Xueying Huang	CL1942 US NA	3962
24199	7590	03/15/2006	EXAMINER	
DUPONT PERFORMANCE ELASTOMERS L.L.C. PATENT RECORDS CENTER 4417 LANCASTER PIKE, BARLEY MILL PLAZA P25 WILMINGTON, DE 19805			MORAN, MARJORIE A	
			ART UNIT	PAPER NUMBER
			1631	

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/630,262

Applicant(s)

HUANG ET AL.

Examiner

Marjorie A. Moran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-34 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, directed to a functionalized nanoparticle, classified in class 530, subclass 402.
- II. Claims 18-22, directed to a method for capturing a capture moiety, classified in class 435, subclass 6.
- III. Claims 23-25, directed to a nucleic acid nanoparticle complex, classified in class 530, subclass 402.
- IV. Claim 26, directed to a process to immobilize multiple nanoparticles on a matrix, classified in class 435, subclass 6.
- V. Claims 27-28, directed to a nanoscale electronic device, classified in class 438, subclass 47.
- VI. Claims 29-34, directed to a functionalized carbon nanotube, classified in class 429, subclass 218.2.

The inventions are distinct, each from the other because of the following reasons:

Group I is related to Groups II and IV as product and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case, the product

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of Group I may be used in either of the methods of Groups II or IV, as well as in methods of signal (e.g. electrical) conduction.

Groups I, III, and V are separate and distinct. While all Groups recite a nanoparticle with a bifunctional protein affixed thereto, the product of Group III is further limited to be affixed to a nucleic acid fragment, and is thus a different structure than that of Group I. The product of Group V is limited to be attached to a matrix and is thus a different structure than that of either of Groups I and III. The different structures of Groups I, III, and V would be expected to have different properties and to behave differently in methods of use, and thus have different effects.

Groups I, III, and V are not related to Group VI. inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, none of the products of Groups I, III, and V are limited to comprise a carbon nanotube, and are therefore necessarily different structures than that of Group VI. Due to the difference in structures, the products of Groups (I, III and V) versus that of Group VI would be expected to have different properties and to behave differently in methods of use, and thus have different modes of operation and effects.

Group III is not related to either of Groups II or IV. The methods of Groups II and IV do not recite production or use of the product of Group III. While the method of Group II MAY be used to make a product such as that recited in Group III, the method of Group II is not so limited. Further, the method of Group II may also be used to make a variety of other products such as a particle attached to a peptide or to cells. As the

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methods of Groups II and IV are not directed to making or using the product of Group III, they are not related to Group III.

Group II is not related to either of Groups V or VI. Group II is not capable of making or using either of the products of Groups V or VI, thus the Groups are not capable of use together.

Inventions IV and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process of Group IV may also be used to make as affinity matrix for immobilizing or detecting specific nucleic acids.

Group IV is not related to Group VI. Group IV is not capable of making or using the product of Group VI, thus the Groups are not capable of use together.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species:

- A) type of semiconductor; e.g. as recited in claim 5;
- B) a monolayer which comprises (1) a molecule with a reactive group, (2) a peptide, (3) troponin, or (4) GSH. If group (1) is elected, then applicant is further required to elect a single reactive group from those recited in claim 6.
- C) a shielding component; e.g. as recited in claim 8;
- D) a first binding domain; e.g. as recited in claim 9;
- E) a recognition or capture moiety to which the second binding domain binds comprising a (1) nucleic acid, (2) peptide, (3) biological cell or (4) inorganic nanotube. If nucleic acid is elected, then applicant is further required to elect a single nucleic acid binding sequence and/or moiety from those recited in claims 11-14, 22, and 32-34. If a binding sequence is elected, then it must correspond with the particular moiety elected. If nanotube is elected, then applicant is further required to elect a single nanotube binding sequence from those recited in claim 17.

The species are independent or distinct because for species (A), each type of semiconductor is a distinct compound, thus representing a separate product and requiring a different search. For species (B) and (D), each molecule/protein is a different structure with distinct properties, therefore each compound/protein is a different and distinct product and requires a different search. For species (C), each shielding component is a different and distinct polymer, and thus is a different product with different properties, and requires a different search from that of any other recited polymer. For species (E), the recited moieties are different classes of biochemical entities, with entirely different properties and methods of use. In addition, each type or moiety is separately classified and would require a separate search.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-4, 7, and 29 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Mon,Wed: 7-1:30; Tue,Thur: 7:30-6; Fri 7-3:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571)272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marjorie A. Moran  
Primary Examiner  
Art Unit 1631

*Marjorie A. Moran*  
3/13/06